REDEFINITION OF *PODABRUS BREVIPENNIS* LeCONTE AND RECOGNITION OF A NEW SUBSPECIES (COLEOPTERA: CANTHARIDAE)[1]

Kenneth M. Fender

Linfield Research Institute
McMinnville, Oregon 97128

Abstract

Podabrus brevipennis LeC., originally based only on micropterous females from Argentine Pass, Colorado, is redescribed with the allotype male coming from Mt. Evans, Colorado at 13,000 ft. elevation. The new subspecies *wittmeri* is based on a single macropterous male from Medicine Bow Mountains, Wyoming at 9,875 ft. elevation. It is suggested that the micropterous condition is the result of adaptation for high altitude existence.

Introduction

Podabrus brevipennis LeConte was described in 1878 on the basis of a single female specimen collected at Argentine Pass, Colorado, elevation 13,000 feet. As indicated by the name, a notable characteristic of the species was the somewhat abbreviated elytra, leaving the apical 3 abdominal segments exposed. Subsequent to his description of the species, LeConte placed representatives of 2 other species in his series of specimens. His reason for such inclusion is obscure and untenable, as noted by Fall in 1928. Three of the specimens so included were *Podabrus excursus* Fall from Utah and British Columbia. Another specimen is an undeterminable female, possibly *Podabrus punctulatus* LeConte.

I have before me 2 specimens of *Podabrus* from Mt. Evans, Colorado (a male from 13,000 feet and a female from 11,600 feet) that seem to fairly well fit the description of LeConte's type. Dr. John F. Lawrence, Museum of Comparative Zoology, kindly compared these specimens with the type and agreed that at least the female is conspecific, and he so designated on the specimen label. He was less certain about the male, probably on sexual and color differences. In May 1970, I was able to study the LeConte and Fall types. Thus I confirmed, to my complete satisfaction, the conspecificity of both specimens. Miskimen (1958) has shown that color is not reliable in some species of *Podabrus*.

I had been unable to find Argentine Pass on my highway maps of Colorado and assumed that the pass had fallen into disuse sometime after the type was collected. A letter from Mr. Robert Fink, Assistant to the Director of the State Historical Society, confirmed this: "It is probable that the old Argentine-Central narrow gauge railroad utilized the pass in its heyday; but the road proved too much for horse and wagon. It lies between Mt. Edwards and Argentine Peak and on the county line that separates Clear Creek County from Summit County." From the map sent to me, it would appear that Argentine Pass is less than 15 air miles from Mt. Evans.

[1]This study was supported by National Science Foundation grant GB-6283X.

Podabrus brevipennis LeConte

Podabrus brevipennis LeC. 1878:460; 1881:48, 69; Fall 1928:93.

Black. Sides of head in front of antennae, basal half of mandibles, basal 2 antennal segments beneath, apical margins of abdominal sternites 4 and 6 narrowly testaceous. Pronotum black to black with either anterior or posterior angles or both more or less widely testaceous, the extent obscurely delimited. Apical angles of all abdominal sternites testaceous. Pubescence cinereous, becoming aureous on tibiae and tarsi. Length 8.5 to 9 mm.

Male. Head feebly shining and finely, sparsely punctured in front of antennae, dull and rugose-punctate behind, becoming scabrose on the neck, feebly, gradually narrowed behind eyes, neck thick; eyes smaller and less prominent than usual, ocular index 75; apical segment of maxillary palpi short, scalene, vertical angle nearer apex than base, all sides arcuate; apical margin of clypeus biarcuate; antennae more widely separated than usual, stout, extending to about tips of metacoxae, second and third segments of nearly equal length, third scarcely longer than wide, length-width ratio of intermediate segments about 13:6, basal two segments shining, remaining segments dull. Pronotum transverse, wider than head, anterior margin feebly bisinuate and broadly, shallowly reflexed, anterior angles rounded and explanate, sides rather arcuate to basal third, becoming sinuate to the obtuse, feebly prominent and shallowly, narrowly reflexed hind angles, basal margin feebly bisinuate and abruptly reflexed, gutter thus formed rather broad; elevations rather high, rounded, each with a round indentation at the top, median depressed area very shallow, sculpture variable, marginal explanate or reflexed areas dull, coarsely rugose-punctate on apical and basal margins, coarsely punctured on lateral margins, elevations and median depressed area shining and moderately sparsely punctured with interspersed finer and coarser punctures, an eroded longitudinal impressed line between the elevations. Scutellum triangular, nearly as wide as long, apical angle broadly rounded, dull and finely, closely punctured. Elytra parallel sided, finely rugose basally, becoming scabrose at and beyond middle. Thorax beneath shining, finely, closely punctured. Abdomen dull, finely, sparsely punctured. All legs normal, all claws of front and middle feet narrowly cleft, appendix a little shorter than claw proper, all claws of hind feet with a short acute tooth. Male genitalia shown in Fig. 1-3.

Female: Similar to male. Sides of pronotum nearly straight and parallel from rounded anterior angles to nearly rectangular hind angles. Last abdominal sternite bidigitate medially with an arcuate indentation exterior to each digit (Fig. 5). All claws with a short, acute tooth.

Podabrus brevipennis brevipennis LeConte

Elytra abbreviated, about twice as long as their combined widths, leaving apical two or three abdominal segments exposed. Third antennal segment subcampanulate (Fig. 4), as wide as long as viewed from above.

LeConte's type, a female, Colorado Argentine Pass, 13,000 feet. Allotype male, Colorado, Mt. Evans, 12-VII-1947, 13,000 feet, Owen Bryant [California Academy of Sciences].

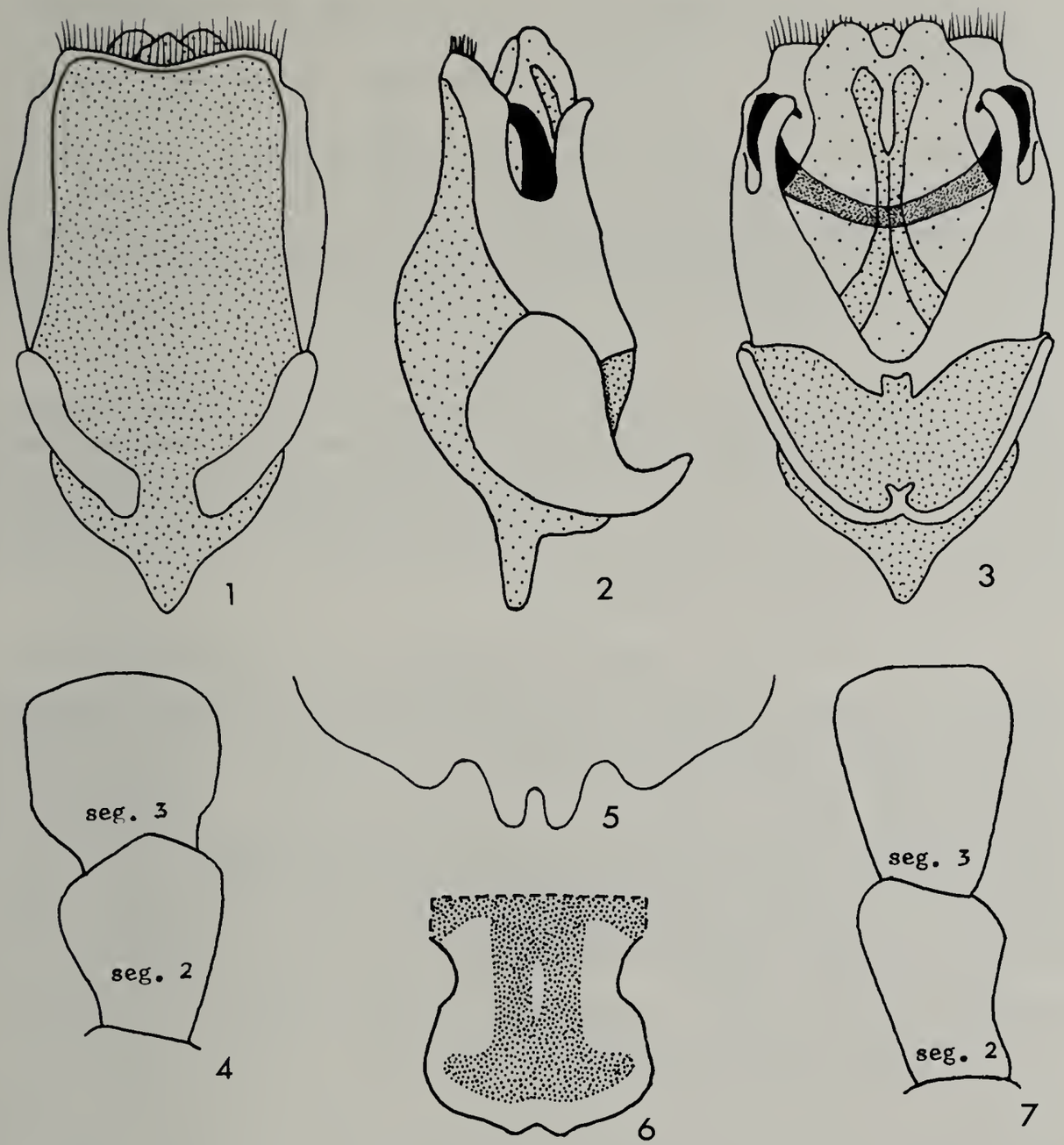

Fig. 1-5: *Podabrus brevipennis brevipennis* LeC. 1) aedeagus, dorsal view. 2) same, lateral view. 3) same, ventral view. 4) second and third antennal segments. 5) apical margin of last abdominal sternite of female. Fig. 6-7: *Podabrus brevipennis wittmeri* Fend. 6) maculation of front of head of type. 7) second and third antennal segments.

Podabrus brevipennis wittmeri Fender, new subspecies

Elytra entire, about 2½ times as long as their combined widths at humeri. Third antennal segment subconical, a little longer than broad (Fig. 7), intermediate segments with length-width ratio of 14:5. In the type, head flavous in front of eyes, with a dark brown maculation as in Fig. 6.

Female: Unknown.

Holotype male: Wyoming, Medicine Bow Mountains, 11-VII-1936, 9,875 feet [collector unknown]. [Fall collection, Museum of Comparative Zoology].

This specimen was labeled "n. sp." in the Fall collection. Despite its normal elytra, the male genitalia, small eyes, widely separated antennae, thick neck but little narrowed behind the eyes, and a larger indentation of

the top of each pronotal elevation, at once show the close association with the parent species.

LeConte and Fall, not having a male before them, could not have known the formula of the claws of the male. They both placed the species in that group in which both sexes have all claws toothed; my group II (1949). Actually it belongs in my group IV, which has claws of male finely cleft on front and middle feet, toothed at base on hind feet, and in the female all claws are broadly toothed at base. This group also contains: *lateralis* LeC., *deceptus* Brown, *obscurevittatus* Fall, *secretus* Brown, *puberulus* LeC., *simplex* LeC., *pattoni* LeC., *gracilis* Fall, *instabilis* Fall, *moestus* Fall, *tetragonoderus* Fall, *altus* Fall, and *pustulatus* Fend.

Mani (1968:54) pointed out the predominance, at high mountain elevations, of insect species with reduced or vestigial wings to complete winglessness. Possibly this species has developed abbreviated elytra at higher elevations, (e.g. above 11,500 feet); whereas populations at lower elevations have retained the entire elytra. More specimens of each, from known elevations, are needed to confirm this.

Literature Cited

Fall, H. C. 1928. A review of the North American species of *Podabrus*. Ent. Amer. 8(new series):65-103.

Fender, K. M. 1949. Studies in the Cantharidae III. Pan-Pac. Ent., 25(1):29-32.

LeConte, J. L. 1878. The Coleoptera of the alpine regions of the Rocky Mountains. Bull. U. S. Geol. & Geogr. Surv. 4:447-480.

LeConte, J. L. 1881. Synopsis of the Lampyridae of the United States. Trans. Amer. Ent. Soc. 9:15-72.

Mani, M. S. 1968. Ecology and biogeography of high altitude insects. Series Ent. 4:1-527.

Miskimen, G. W. 1958. The problem of color variation in *Podabrus*. Proc. Ent. Soc. Washington 60(6):265-266.

ON THE VALIDITY OF *CICINDELA CYANOCEPHALONOTA* ECKHOFF (COLEOPTERA: CICINDELIDAE)

George C. Steyskal

Systematic Entomology Laboratory,
Agricultural Research Service, USDA
Mail address: c/o U.S. National Museum, Washington, D. C. 20560

Although the name *Cicindela cyanocephalata* Eckhoff, 1939, like numerous other current names, is contrary to certain recommendations in the International Code of Zoological Nomenclature, it conforms to all rules and is therefore a satisfactory replacement name for the preoccupied *C. cyanocephala*. The later name *C. cyanocephalonota* Eckhoff, 1970 (Coleopterists' Bulletin 24: 32) is unnecessary and must be considered a synonym of *C. cyanocephalata*.